

Elongate vacuum system for coating one or both sides of a flat substrate

Patent claims

1. Elongate vacuum system for coating one or both sides of a flat substrate which can be moved through the vacuum system in a transportation plane by means of a transport system, whereby the vacuum system comprises at least one magnetron with magnetron surrounding area and is subdivided into successive compartments in the direction of transportation of the substrate by closeable separating walls comprising suction openings, which can be evacuated either directly via a vacuum connection located on the compartment or indirectly via a suction opening in the separating wall, whereby at least one compartment comprises an upper partial compartment which is located above the substrate, the said partial compartment comprising, in at least one of the outer walls thereof, a closeable upper opening, characterized in such way that horizontal and/or vertical elements (17,20) can be mounted in at least one of the upper partial compartments (18) for subdivision of the upper partial compartment (18) into several sections (21).
2. Elongate vacuum system according to Claim 1, characterized in such way that at least a further lower compartment (19) limited by the separating walls (4) is located below the transportation plane (5), which in at least one of the outer walls (7, 8, 9) exhibits a closable lower opening (23) as well as a closable suction opening (12) in each separating wall (4).
3. Elongate vacuum system according to Claim 2, characterized in such way that horizontal and/or vertical elements (17, 20) can be mounted in the lower partial compartment (19) for subdivision of the lower partial compartment (19) into several sections (21).
4. Elongate vacuum system according to Claim 2 or 3, characterized in such way that the lower partial compartment (19) exhibits a structure reflected around the transportation plane of the upper compartment (18) opposite it above the transportation plane.
5. Elongate vacuum system according to Claims 1 to 4, characterized in such way that the upper and lower openings (10, 23) can be closed with covers (11, 11a) and that at least one magnetron (15) is mounted on a cover (11, 11a) and/or a vacuum connection (16) is present.
6. Elongate vacuum system according to Claim 5, characterized in such way that the covers (11, 11a) exhibit the same dimensions to one another.

7. Elongate vacuum system according to Claims 1 to 6, characterized in such way that the upper (10) and lower (23) openings of all partial compartments (18, 19) exhibit the same dimensions.
8. Elongate vacuum system according to Claims 1 to 7, characterized in such way that at least one of the upper (10) or lower (23) openings in a side outer wall (9) of an upper and/or lower partial compartment (18, 19) is designed as a vacuum connection (16).
9. Elongate vacuum system according to Claims 1 to 8, characterized in such way that the horizontal and/or vertical elements (17, 20) for subdivision of the upper and lower partial compartments (18, 19) are even.
10. Elongate vacuum system according to Claims 1 to 9, characterized in such way that at least one horizontal element (17) can be placed on holders (24) exhibiting a horizontal supporting surface, which are present on at last two opposite walls of the partial compartment (18, 19).
11. Elongate vacuum system according to Claims 1 to 10, characterized in such way that a vertical element (20) is fastened on at least one horizontal element (17) by means of a joint (26) and the vertical element (20) extends between the horizontal element (17) and the upper or lower outer walls (7, 8) directly opposite the horizontal element (17).
12. Elongate vacuum system according to Claims 1 to 10, characterized in such way that at least one horizontal element (17) exhibits an insertion device for holding a vertical element (20) and the vertical element (20) extends between the horizontal element (17) and the upper or lower outer walls (7, 8) directly opposite the horizontal element (17).
13. Elongate vacuum system according to Claim 11 or 12, characterized in such way that fixing elements (25) are present on the cover (11) which closes the upper or lower opening (10, 23) located in the upper or lower outer wall (7, 8) opposite the horizontal element (17), which fix the vertical element (20) in its position after closure of the upper or lower opening (10, 23).
14. Elongate vacuum system according to Claims 1 to 13, characterized in such way that in at least one upper and/or lower partial compartment (18, 19) a horizontal element (17) is located in such a way that a section (21) of the respective partial compartment (18, 19) is separated off towards the space surrounding the transportation plane (5).
15. Elongate vacuum system according to Claims 1 to 14, characterized in such way that the horizontal and/or vertical elements (17, 23) of at

least one partial compartment (18, 19) have a closeable additional suction opening (12).

16. Elongate vacuum system according to Claims 1 to 15, characterized in such way that the size of the suction openings (12) in the separating walls (4) of the upper and/or lower partial compartments (18, 19) and/or of the additional suction openings (12) in the horizontal and/or vertical elements (17, 20) are designed to be adjustable.